

REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, the applicant respectfully submits that the pending claims are not anticipated under 35 U.S.C. § 102. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.**

Before addressing the outstanding issues, the undersigned would like to thank Examiner Duong for courtesies extended during a telephone interview on March 9, 2005 (referred to as "the telephone interview"). During that interview, the Malik patent was discussed with reference to various claimed features. Although the Examiner better appreciated the differences between the various claimed features and the Malik patent, he noted that the "diff" command is used on Unix and that he thought that Cisco might have a "diff" command.

Applicant believes that the Unix "diff" command was used to compare two files, but is unaware of it being used in the context of comparing configurations in general, or in the context of comparing configurations for data forwarding devices in particular. Applicant also believes that at the time of the invention, publicly available Cisco routers did not offer a "diff"-like command. Indeed, in the command line interface ("CLI")

on Cisco routers at the relevant time, it is Applicant's understanding that changes were directly made to the committed configuration as such changes were entered. It is Applicant's understanding that Cisco's operating system -- IOS -- did not allow users to have two different configurations simultaneously on the same router.

Rejections under 35 U.S.C. § 102

Claims 2-11, 13-20 and 22-31 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,349,306 ("the Malik patent"). Applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Before addressing the patentable features of the various claims, the Applicant again introduces the Malik patent.

The Malik patent concerns network management, including remote, centralized configuration of devices on the network. (See, e.g., Figure 1, column 3, lines 13-23, and column 5, lines 35-43.) In the Malik patent, a "configuration" is defined as a particular setting of device parameters that govern the operational characteristics of a network device (See, e.g., column 1, lines 22-24.), or all attribute/value pairs obtained by interrogating selected models through a template (See, e.g., column 3, lines 59-61.). In the Malik patent, "models" are defined as representing different associated network devices, and each model includes attribute values for parameters of the particular network device. (See, e.g., column 2, lines 11-13.) Finally, in the Malik

patent a "template" is defined as a list of attributes for a device of a certain model type. (See, e.g., column 3, lines 24-26.) To reiterate, as shown in Figure 1, the configuration management system 18 is separate from the device of a live network 10 actually being configured. **This remote, centralized configuration management does not teach comparisons by a data forwarding device of configurations, for the data forwarding device, stored on the data forwarding device.**

In the Malik patent, a verification step permits the comparison of attribute/value pairs of a loaded (i.e., saved) configuration of a model with the actual attribute/value pairs captured from the model, and the display of the results of such a comparison. (See, e.g., column 9, lines 20-27.) The output may be a report of discrepancies between attribute/value pairs after the comparison. (See, e.g., column 7, lines 34-42.) More specifically, in the Malik patent, the verify option enables a user to verify whether the actual attribute values of a model match previously loaded attribute values of a created configuration. (See, e.g., column 8, lines 14-16.) **Thus, the verify configuration function in the Malik patent is limited to comparing values of attributes in two configurations -- one configuration as loaded to a device, and the other as read from the device. The teaching does not extend to comparing a configuration that has not been loaded and committed on a device with a configuration that has been saved on the device, nor does it extend to comparing statements without regard to parameter values in such configurations.**

Although the Malik patent discusses displaying hierarchical relationships between network devices of a network (See, e.g., Column 4, lines 58-61.), this has nothing whatsoever to do with hierarchically arranged statements in a configuration as claimed.

Claims 2-9

Independent claim 4 is not anticipated by the Malik patent because the Malik patent does not teach hierarchical statements. Claim 4, as amended, is reprinted below with this feature in bold typeface:

4. A method comprising:
 - a) accepting at least a part of a selected set of configuration information for a data forwarding device;
 - b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
 - c) determining differences, if any, between
 - the at least a part of the set of candidate configuration information for the data forwarding device, and
 - the at least a part of the selected set of configuration information for the data forwarding device,wherein the set of candidate configuration information for the data forwarding device includes a plurality of statements,
wherein a first statement of the plurality of statements of the set of candidate configuration information for the data forwarding

device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration,

wherein the selected set of configuration information for the data forwarding device includes a plurality of statements, and

wherein a first statement of the plurality of statements of the selected set of configuration information for the data forwarding device contains a second statement of the plurality of statements to define at least a part of a hierarchical configuration. [Emphasis added.]

Further, claim 5, which depends from claim 4, further recites that the comparison of configurations only includes a first statement and descendants from the first statement. Claim 5 is reprinted below with this feature depicted in bold typeface:

The method of claim 4 wherein the at least the part of the set of candidate configuration information **only includes a defined first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration,** and

wherein the at least the part of the selected set of configuration information includes a corresponding first statement and any of the plurality of statements that are descendants of the defined first statement in the hierarchical configuration. [Emphasis added.]

Further, dependent claim 7 is not anticipated by the Malik patent because it further recites that the first

statement is selected by a user. Further, dependent claim 6 is not anticipated by the Malik patent because it recites that the first statement is based on a statement of hierarchical candidate configuration on which the user is presently working. Accordingly, these dependent claims are further not anticipated by the Malik patent for at least the foregoing reasons.

Further, dependent 9 is not anticipated by the Malik patent because it recites associating a predetermined permission value with a user that is logged in, and determining whether the logged in user is permitted to access one of at least two categories at a given hierarchical level of configuration information based on the predetermined permission. In this way, the users permitted to access and/or edit various hierarchical levels and categories of configuration information may be limited.

As stated on lines 22-25 of page 23 of the present application, this is advantageous because such hierarchical scoping capabilities may be used to limit a compare configurations operation, thereby permitting users to work on smaller, more manageable parts of sets of configuration information. Irrelevant parts of a large, complex configuration need not be compared. The Malik patent does not teach such features.

The Examiner contends that the Malik patent teaches this feature, citing column 3, lines 46-51, column 4, lines 8-12, column 6, lines 31-35 and 39-47, and Figure 3. (See Paper No. 11182004, page 2.) However, these sections of the Malik patent merely concern attributes of a configuration and attribute values of a configuration. The Malik patent cites and incorporates U.S. Patent No.

5,261,044 ("the Dev patent"), which discusses hierarchical **relations** between models. However, this is not relevant to the presently claimed invention because **model relations and associations has nothing to do with relationships between configuration statements in a configuration.** The Examiner contends that Malik refers to a list of attributes in the configuration and their instance IDs, if any, and concludes that this implies that a particular attribute may contain one or more sub-attributes, citing Figure 3. (See Paper No. 11182004, pages 2 and 3.) However, the Malik patent merely discusses a list of attributes in a configuration. All this implies is that the configuration can have more than one attribute. The underscoring used in Figure 3 of the Malik patent does not denote a hierarchical relationship, but is merely part of the attribute name. Finally, even assuming, arguendo, that the Malik patent teaches or suggests hierarchical attributes, the claimed invention concerns hierarchical statements of a configuration.

The Examiner also contends that editing a particular section of a configuration implies a step of comparing. (See Paper No. 11182004, page 3.) However, **editing** statements is different from **comparing** statements.

Accordingly, independent claim 4 is not anticipated by the Malik patent for at least this reason. Since claims 2, 3, and 5-9 depend, either directly or indirectly, from claim 4, these claims are similarly not anticipated by the Malik patent.

During the telephone interview, the Examiner expressed his opinion that these claims recite a relatively minor feature that is not, by itself, worthy

of patent protection. Applicant, however, respectfully notes that since these claims have utility and are statutory under 35 U.S.C. § 101, they are patentable because they are novel and non-obvious over the art of record.

Claims 10, 13 and 22-26

Independent claims 10, 13, 22, 23, 25 and 26 are not anticipated by the Malik patent because the Malik patent does not teach **comparing, with a data forwarding device, configurations for that particular data forwarding device**. In at least some of these claims, one or both configurations are stored on the particular data forwarding device. Claim 10 is reprinted here with this feature depicted in bold typeface:

A method comprising:

- a) accepting at least a part of a selected set of **configuration information for a data forwarding device**;
- b) accepting at least a part of a set of **candidate configuration information for the data forwarding device**; and
- c) **determining differences**, if any, **between**
 - the at least a part of the set of **candidate configuration information** for the data forwarding device, and
 - the at least a part of the **selected set of configuration information** for the data forwarding device,

wherein the act of accepting at least a part of a selected set of configuration information for a data forwarding device is performed by accessing a storage device of the data forwarding device,

wherein the act of accepting at least a part of a set of candidate configuration information for the data forwarding device is performed by accessing a storage device of the data forwarding device; and

wherein the act of determining differences, if any, between

- the at least the part of the set of candidate configuration information for the data forwarding device, and
- the at least the part of the selected set of configuration information for the data forwarding device,

is performed by a component of the data forwarding device. [Emphasis added.]

As discussed above, the Malik patent teaches a remote, centralized configuration management. For example, as shown in Figure 1, the configuration management system 18 is separate from the device of a live network 10 actually being configured.

The Examiner contends that the acts of loading and verifying configurations teaches this. (See Paper No. 11182004, page 6.) This does not teach comparisons by a data forwarding device of configurations for the particular data forwarding device, stored on the data

forwarding device. Rather, this comparison is done at a central location, not at the data forwarding device for which the configuration will be used. Accordingly, independent claims 10, 13, 22, 23, 25 and 26 are not anticipated by the Malik patent for at least this reason. Since claim 24 depends from claim 23, it is similarly not anticipated by the Malik patent.

During the telephone interview, the Examiner better appreciated this difference, but suggested that Applicant combine features of the wherein clauses of elements (a) and (b) of claim 14 into claim 10. However, since claim 10, as written, is patentable over the art of record, Applicant has not elected to amend claim 10 at this time. Note, however, that new claim 33 depends from claim 10 and recites the features recommended by the Examiner. The Examiner also indicated that claim 22 in its current form clearly recited the above-described distinction.

Claim 11

Independent claim 11 is not anticipated by the Malik patent because the Malik patent does not teach determining differences, if any, between at least a part of a set of candidate configuration information for a data forwarding device, and at least a part of a selected set of configuration information for the data forwarding device, by considering changes to configuration statements without regard to parameter values. Claim 11 is reprinted below with this feature depicted in bold typeface:

11. A method comprising:
 - a) accepting at least a part of a selected set of configuration information for a data forwarding device;
 - b) accepting at least a part of a set of candidate configuration information for the data forwarding device; and
 - c) determining differences, if any, between
 - the at least a part of the set of candidate configuration information for the data forwarding device, and
 - the at least a part of the selected set of configuration information for the data forwarding devicewherein the set of candidate configuration information for the data forwarding device includes a plurality of statements, wherein the selected set of configuration information for the data forwarding device includes a plurality of statements, and
wherein the act of determining differences, if any, between
 - the at least a part of the set of **candidate configuration information** for the data forwarding device, and
 - the at least a part of **the selected set of configuration information** for the data forwarding device, **considers changes to statements without regard to parameter values.** [Emphasis added.]

That is, in one embodiment consistent with the present invention, if the only difference between a statement in one configuration and a corresponding statement in

another is a different parameter value, this difference is ignored by the comparison. The Malik patent does not teach this feature.

The Examiner cites the model load and verify features of the Malik patent as teaching this feature. (See Paper No. 11182004, page 6.) As stated above, in the Malik patent, a verification step permits the comparison of **attribute/value pairs** of a configuration of a model with **attribute/value pairs** of another configuration, and the display of the results of such a comparison. (See, e.g., column 9, lines 20-27.) More specifically, in the Malik patent, the verify option enables a user to verify whether **attribute values** of a model match **attribute values** of a created configuration. (See, e.g., column 8, lines 14-16.) Thus, the verify configuration function in the Malik patent is limited to comparing values of attributes in two configurations. The teaching does not extend to comparing statements in such configurations. Accordingly, claim 11 is not anticipated by the Malik patent for at least this reason.

During the telephone interview, the Examiner better appreciated this features, but indicated that he would need to further consider whether it was obvious.

Claims 14-20

Independent claim 14 is not anticipated by the Malik patent because the Malik patent does not verify or compare configurations before a candidate configuration is loaded or committed to a data forwarding device. Claim 14, as amended, is reprinted below with this feature depicted in bold typeface:

A method for determining differences in at least a part of sets of configuration information, comprising:

- a) accepting at least a part of a first set of configuration information for a data forwarding device, **wherein the first set of configuration information has not been saved on the data forwarding device as a committed configuration;**
- b) accepting at least a part of a second set of configuration information for the data forwarding device, **wherein the second set of configuration information has been saved on the data forwarding device;** and
- c) determining differences, if any, between
 - the first set of configuration information for a data forwarding device, and
 - the second set of configuration information for a data forwarding device. [Emphasis added.]

As stated in the specification, one advantage of the present invention is that it helps users to detect errors in a candidate configuration information, for example, **before committing to that candidate configuration** information. (See, e.g., page 23, lines 20-22.) This can be important since a committed configuration can begin to affect the network of which the data forwarding device is a part. On the other hand, in the Malik patent, the verify operation is used to confirm whether a load was actually successful or not. More specifically,

when a load is commanded, a configuration is loaded from a central terminal to an actual networking device (referred to as a "model"). A user might want to know if the configuration was actually loaded properly. To check this, the user can use the verify operation to capture the actual configuration, as it exists on the model, and compare it to the configuration that was loaded to the model. To put it more simply, in the Malik patent, the load command is like a write command, where the a configuration is sent from a central location to a remote device to be written onto the remote device. The verify command is like a read and compare command. The previously loaded configuration is compared with a configuration actually read from the device. If the load was successful, the two configurations should be the same. In any event, the comparison occurs after the user already committed the configuration to the device.

In view of the foregoing, claim 14 is not anticipated by the Malik patent for at least this reason. Since claims 15-20 depend, either directly or indirectly from claim 14, they are similarly not anticipated by the Malik patent. Since claim 23, as amended, includes a similar feature, it is similarly not anticipated by the Malik patent.

During the telephone interview, the Examiner alleged that this is well known. To Applicant's knowledge, this was not done at the time of the invention. As discussed above, the Unix "diff" command operated generally on files, not committed and uncommitted data forwarding device configurations. As further discussed above, Applicant's understands that publicly available Cisco products at the relevant time period did not have a

"diff"-like feature. If the Examiner disagrees, Applicant respectfully requests that the Examiner make such well-known art and arguments supporting a conclusion of obviousness of record in a new Office Action.

Further, dependent claim 15 recites a feature similar to that discussed above with reference to claim 4. Accordingly, claim 15 is further not anticipated by the Malik patent for the reason discussed above with reference to claim 4.

Further, dependent claim 19 recites a feature similar to that discussed above with reference to claim 10. Accordingly, claim 19 is further not anticipated by the Malik patent for the reason discussed above with reference to claim 10.

Further, dependent claim 20 recites a feature similar to that discussed above with reference to claim 11. Accordingly, claim 20 is further not anticipated by the Malik patent for the reason discussed above with reference to claim 11.

New Claims

New claim 32 depends from claim 14 and further recites that the first set of uncommitted configuration information is from a candidate configuration, while the second set of configuration information is from a committed configuration. This feature further distinguishes the claimed invention over the cited art.

New claim 33 depends from claim 10 and further recites that the configurations being compared are committed and uncommitted configurations. ***During the***

telephone interview, the Examiner indicated that this feature, when combined with claim 10, would likely be allowable.

Conclusion

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicant requests that the Examiner pass this application to issue.

Respectfully submitted,

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